

09903504 074304  
11

a front guide frame for supporting the front lens frame;

15 a zoom ring advancing and retreating along an optical axis of the front lens group;

16 an inner helicoid ring installed to be capable of advancing and retreating with respect to the zoom ring;

17 a rear lens frame having a rear lens group arranged on the same optical axis as the front lens group; and

22 a cam unit formed at the zoom ring and an inner<sup>16</sup> rotator installed at the inner<sup>14</sup> helicoid ring to be capable of advancing and retreating for adjusting the interval between the front lens group and the rear lens group as the front lens group moves.

2. (Amended) The barrel assembly as claimed in claim 1, wherein the cam unit comprises:

a cam portion formed along an end portion of the zoom ring;

33b a protrusion formed at the outer circumferential surface of the inner rotator which is coupled to the inner helicoid ring by a guide unit and contacting the cam portion; and

34 a coupling unit installed at the inner rotator and the rear lens frame for advancing and retreating the rear lens frame with respect to the front guide frame.

3. (Amended) The barrel assembly as claimed in claim 2, wherein the coupling unit comprises:

LAW OFFICES

FINNEGAN, HENDERSON,  
FARABOW, GARRETT,  
& DUNNER, L.L.P.  
1300 I STREET, N. W.  
WASHINGTON, DC 20005  
202-408-4000

a coupling protrusion formed on the outer circumferential surface of the rear lens frame and

a cam groove formed along the inner circumferential surface of the inner rotator to be coupled to the coupling protrusion.

4. (Amended) The barrel assembly as claimed in claim 3, wherein:

the cam groove comprises:

an entrance section for guiding entrance of the coupling protrusion;

an inclined section connected to the entrance section; and

an intermediary section linearly extending from the inclined section; and

the cam portion comprises:

a zoom section corresponding to the intermediary section and

an accommodating section formed at a portion

corresponding to the inclined section to be inclined in a direction that is the same as the inclined section and opposite to the zoom section.

5. (Amended) A barrel assembly of a zoom camera comprising:

a front lens frame having a front lens group;

a front guide frame for supporting the front lens frame;

a zoom ring having a cam portion formed along an end portion of the zoom ring;

RECEIVED

11

LAW OFFICES

FINNEGAN, HENDERSON,  
FARABOW, GARRETT,  
& DUNNER, L.L.P.  
1300 I STREET, N. W.  
WASHINGTON, DC 20005  
202-408-4000



09903594-074304

11

7. (Amended) The barrel assembly as claimed in claim 5, wherein:

the cam unit comprises:

a cam portion formed along an end portion of the zoom ring

and

a protrusion formed on the outer circumferential surface of  
the inner rotator coupled by the inner helicoid ring and  
the guide unit and contacting the cam portion; and

the coupling unit comprises:

a guide protrusion formed on the outer circumferential  
surface of the rear lens frame and

a cam groove formed in the inner circumferential surface of  
the inner rotator to be coupled to the coupling  
protrusion.

8. (Amended) The barrel assembly as claimed in claim 7, wherein:

the cam groove comprises:

an entrance section for guiding entrance of the coupling  
protrusion;

an inclined section connected to the entrance section; and  
an intermediary section linearly extending from the inclined  
section; and

the cam portion comprises:

a zoom section corresponding to the intermediary section  
and

LAW OFFICES

FINNEGAN, HENDERSON,  
FARABOW, GARRETT,  
& DUNNER, L.L.P.  
1300 I STREET, N. W.  
WASHINGTON, DC 20005  
202-408-4000

corresponding to the inclined section to be inclined in a direction that is the same as the inclined section and opposite to the zoom section.

- [Handwritten signature]*

an inner rotator advancing and retreating in a lengthwise direction by a first guide unit along the inner circumferential surface of the inner helicoid ring;

a cam unit installed at the outer circumferential surface of the inner rotator and the zoom ring for advancing and retreating the inner rotator during rotation of the inner helicoid ring and including a coupling unit formed on the inner circumferential surface of the inner rotator and the outer circumferential surface of the rear lens frame for advancing and retreating the rear lens frame during the rotation of the inner rotator;

18 an inner guide ring coupled to the front guide frame and the rear lens frame to be capable of sliding for preventing the front guide frame and the rear lens frame from rotating;

a guide ring coupled to the inner guide ring to be capable of advancing and retreating by a second guide unit;

a helicoid ring in which the guide ring is rotatably inserted and coupled to the inner helicoid ring by a third guide unit for advancing and retreating the inner helicoid ring while rotating the inner helicoid ring during rotation of the helicoid ring; and

a driving unit for driving the helicoid ring.

12.- (Amended) The barrel assembly as claimed in claim 11, wherein the advancing and retreating unit comprises:

LAW OFFICES

FINNEGAN, HENDERSON,  
FARABOW, GARRETT,  
& DUNNER, L.L.P.  
1300 I STREET, N. W.  
WASHINGTON, DC 20005  
202-408-4000

a helicoid female screw thread formed on the inner circumferential surface  
of the inner helicoid ring and  
a helicoid male screw thread formed on the outer circumferential surface  
of the zoom ring.

13. (Amended) The barrel assembly as claimed in claim 11, wherein:

the cam unit comprises:

a cam portion formed along an end portion of the zoom ring  
and

a protrusion formed on the outer circumferential surface of  
the inner rotator coupled by the inner helicoid ring and  
the guide unit and contacting the cam portion; and

the coupling unit comprises:

a guide protrusion formed on the outer circumferential  
surface of the rear lens frame and

a cam groove formed in the inner circumferential surface of  
the inner rotator to be coupled to the coupling  
protrusion.

14. (Amended) The barrel assembly as claimed in claim 13, wherein:

the cam groove comprises:

an entrance section for guiding entrance of the coupling  
protrusion;

an inclined section connected to the entrance section; and